

# **2003-04 RUFFED GROUSE POPULATION STATUS REPORT**



## **KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES**



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## INTRODUCTION

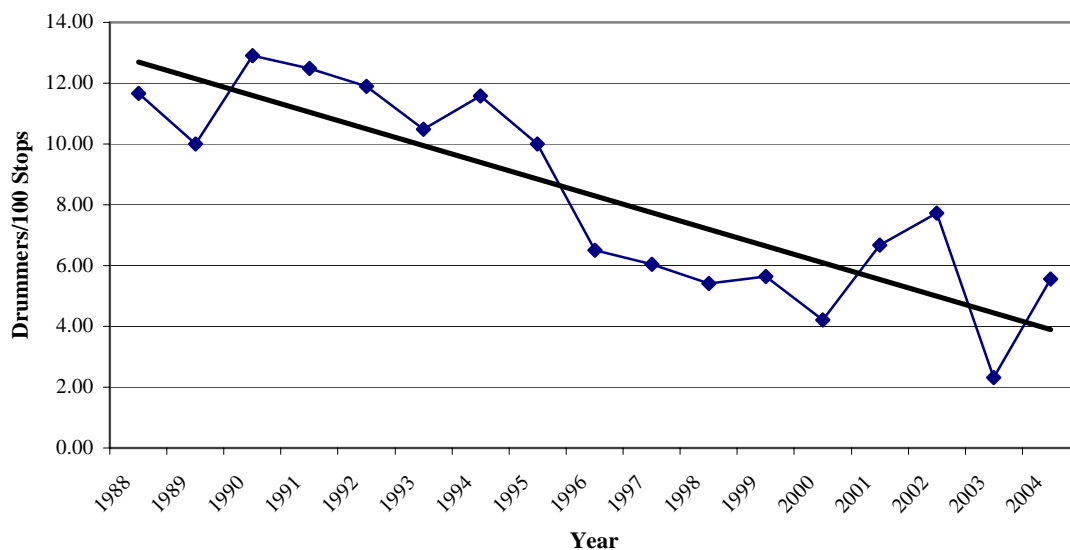
The Kentucky Department of Fish and Wildlife Resources (KDFWR) utilizes three annual surveys to track the status of Kentucky's grouse population: a drumming survey, grouse hunter cooperator survey, and a grouse wing collection survey. The Drumming Survey and Hunter Log Cooperator Survey provide an independent index of the grouse population trend. The wing collection survey provides information about the age and sex ratio of the harvest.

Kentucky's 2003-04 ruffed grouse hunting season began Nov. 10, 2002 and ended Feb. 29, 2003 (112 days). Hunters were able to pursue grouse in 53 eastern Kentucky counties. An early grouse season was open on 7 wildlife management areas (WMA) from Oct. 1 to Dec. 31, 2003 (90 days). Those WMAs included Beaver Creek, Big South Fork National River and Recreation Area, Cane Creek, Clay, Fleming, and Lake Cumberland.

## GROUSE POPULATION STATUS

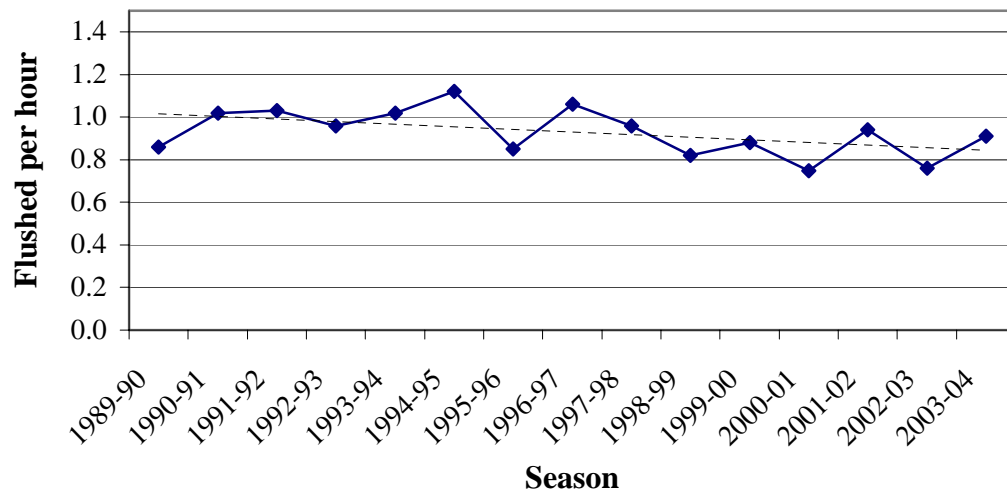
*Drumming Survey* – From a low in 2000, the number of drummers increased in 2001 and again in 2002, however in 2003, numbers plummeted because most routes were not completed (Figure 1). Fortunately, most of routes were completed in 2004 and drummers were up markedly (Appendix A). Actually, the increase was 140%! The overall trend is steadily declining which is likely caused by the lack of forest disturbance. Many survey stops were once characterized by dense understories, but over time, they have developed into more mature stands. The 2004 result of 5.6 drummers per 100 stops is well below the long-term average of 8.3 drummers.

**Figure 1. Individual displaying grouse from Grouse Drumming Survey in Kentucky, 1988-2004.**



*Flush Rate* – The flush rate increased by 20% in the 2003-04 season compared to the previous season (Figure 2). The 2003-04 flush rate of 0.91 birds per hour was just below the long-term average of 0.93 birds per hour. The overall trend of the grouse population based on flush rates is slowly decreasing. Flush rate data are the most reliable indicator of the grouse population if sample sizes are adequate.

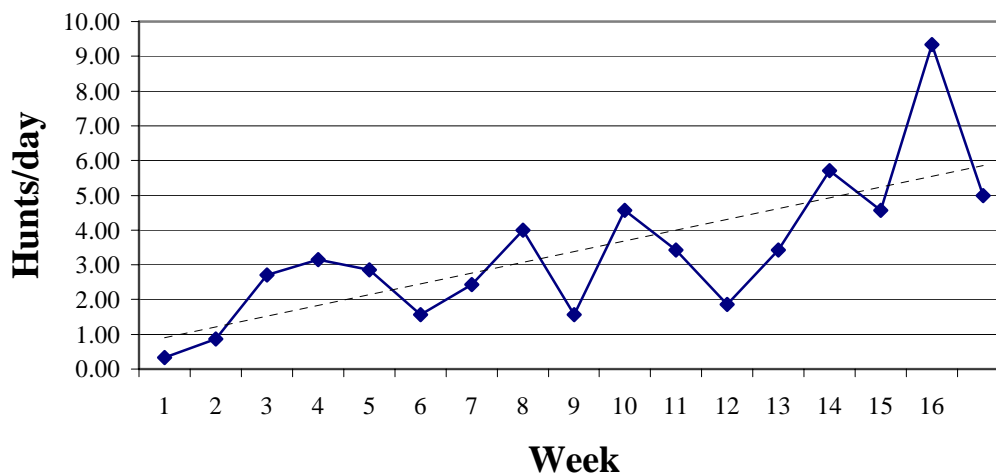
**Figure 1. Flush rates from grouse hunter logs in Kentucky, 1989-2004.**



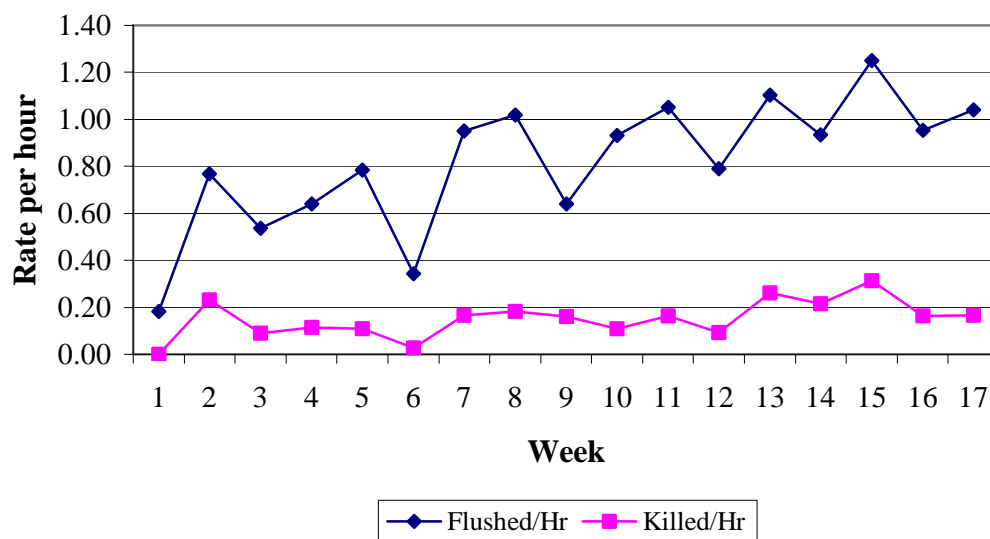
## HUNT AND HARVEST DYNAMICS

*Hunt Characteristics* - Hunter log cooperators (n=27) reported data from 362 hunts in 2003-04. The typical hunt was 3.5 hours long consisting of roughly 2 hunters. Dogs (average of 1.9 dogs/hunt) were used 98% of the time, and hunting parties harvested 0.6 grouse/hunt. Hunting effort increased steadily as the season advanced (Figure 3). Also, as the season progressed, hunters flushed more grouse/hour, but the harvest remained fairly constant (Figure 4).

**Figure 3. Hunts per available day from grouse hunter logs in Kentucky, 2003-04.**



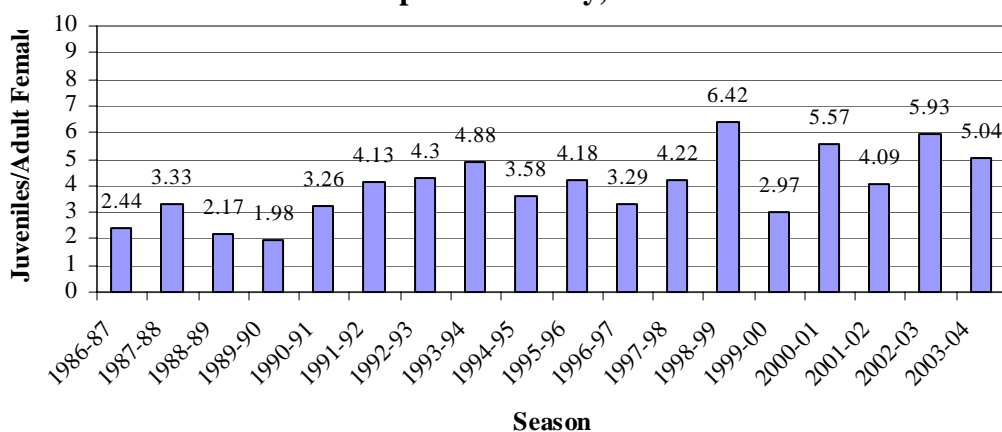
**Figure 4. Flush and harvest rates from grouse hunter logs in Kentucky, 2003-04.**



*Harvest Age and Sex Ratio* – The percentage of adult and juvenile grouse in the harvest is an indirect measure of reproductive success. Hunters who submitted wings and rump feathers of harvested grouse helped us attain an estimate of the number of juvenile grouse killed per adult hen (Figure 5). The 2003-04 season estimate of 5.04 was higher than the long-term average of 3.99. Males comprised 51% of the harvest, whereas females were 31% of the harvest. Eighteen percent of the collected wings and rump feathers could not be sexed.

In general, the proportion of juveniles in the harvest is a poor indicator of population trend. For example, the highest recorded proportion of juveniles killed per adult hen occurred during the 1998-99 season. However, the flush rate that same season was the third lowest recorded since the survey began. The contradiction implies that the wing data is unreliable unless there was extremely high rates of adult mortality, which was unlikely. Also, the increasing trend in production should correspond to a growing population, but the flush data shows otherwise. The inexperience of juveniles makes them more susceptible to harvest which further minimizes the reliability of the wing data.

**Figure 5. Juvenile/adult female grouse rates from Kentucky Hunter Cooperator Survey, 1986-2004.**



## **OUTLOOK FOR THE 2004-05 GROUSE HUNTING SEASON**

Kentucky grouse hunters can expect an above average hunting season overall. The early and warm spring may have improved chick survival and hen condition. Also, research has showed that the fall mast crop is linked to the productivity of hens. Simply, healthy hens lay better eggs and are better able to raise a brood. Last fall's mast survey showed the highest mast production in 20 years, so we are excited about the possibilities for this year. As always, there will be local areas where grouse are plentiful, and areas where grouse are scarce. Do your homework, and give your boots a workout to find birds.

## **ADDITIONAL HELP IS NEEDED**

Grouse hunters can improve the survey information used to track Kentucky's grouse population. First, more participants are needed. Please prompt your friends and neighbors to track their hunts and pass that information on to KDFWR. Forms are available from the Department (1-800-858-1549) or from the hunting regulations guide. Forms are also available from the Department website (<http://www.kdfr.state.ky.us>) under "Grouse" in the small game section of "Hunting". We remain pleased with the Hunter Log Cooperator Survey and hope to see it expand with every passing season. If you submit wings, please remember to fill out a hunting log, too. If you choose to only participate in one survey, then complete the hunting log. We get the best and most reliable data from those efforts. The KDFWR Wildlife Division sincerely thanks the grouse hunters who have participated in the grouse surveys for many years. Your dedication makes this report possible and helps track grouse populations across the state.

Appendix A. Kentucky Ruffed Grouse Drumming Survey Results (Drummers heard from a station on both survey days assumed the same.)

	Number of Individual Drumming Grouse by Year																
Route Name	County	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<i>Bluegrass Region</i>																	
Harrison County	Harrison	4	6	9	4	2	2	3	3	5	-	0	0	0	-	-	-
Madison County	Madison	-	2	3	5	0	5	-	3	3	0	2	0	0	-	-	-
Lapland WMA	Meade	1	1*	2	-	1	2	2	0	1	1	0	0	0	-	-	-
<i>Northeast Region</i>																	
Bracken County	Bracken	1	0	0	1	0	0	-	-	-	-	2	1	0	2	0	0
Grayson Lake WMA	Carter	4	3	3	3	1+	6	7	1	0	1	1	0	4*	1	0	1
Fleming WMA	Fleming	5	5	7	4	0+	1	0	2	3	2	2	3	4	5	-	1
Paintsville Lake WMA	Johnson	-	-	2	8*	8	6	1	2	3	1*	1	2	5	2	0*	1
Yatesville Lake WMA	Lawrence	3	5	5	4	6	7	2	3	0	2	1	0	1	1	1	5
Clay WMA	Nicholas	4	3	2	3	3	2	3	2	1	5	-	4	2	-	-	-
Fishtrap WMA	Pike	6	3	1	1	12	8	4	7	4	6	4	2	6	6	-	3
Daniel Boone NF	Rowan	1	4	4	2	2	1	1	1	0	0	0	0	2	2	2	3
<i>Southeast Region</i>																	
Greenbriar Ridge	Adair	-	-	-	-	-	-	0	0	0	0	0	0	0	0	-	-
Addington	Breathitt	-	-	-	-	-	-	9	0	-	-	-	-	-	-	-	-
Robinson Forest	Breathitt	-	-	-	-	-	-	5	0	-	-	-	5	2	-	-	-
Beech Creek	Clay	-	-	-	-	-	-	0	0	0	-	1	1	1	0	1	2
Black Mountain	Harlan	3	9	2	7	10	5	8	-	4	2	3	2	2	2	-	-
Mill Creek WMA	Jackson	2	2	2	3	1	2	3	2	1	1	3	3	3	3	0	2
War Fork	Jackson	4	4	3	2	0	4	2	1	2	2	3	2	3	4	1	2
Quicksand	Knott/Breathitt	-	-	2*	7	4	3	6	-	2	-	3	2	1	0	-	-
Cane Creek	Laurel	-	-	0*	2	1	0	0	1	1	1	4	1	3	3	2	2
Redbird WMA	Leslie/Clay	-	6	16	-	7	11	9	3	-	2	3	1*	5	9	-	-
Pine Mountain WMA	Letcher/Harlan	2	1	4	2	2	2	1	5	2	1	1	0	2	-	-	2
South Fork	McCreary	3	-	2	1	2	2	3	1	1	2	0	0	0	0	0	0
Buck Knob	McCreary/Pulaski	0	-	1	1	1	0	0	1	2	1	1	0	0	0	1	0
Blue Diamond Coal	Perry	-	-	-	-	-	-	-	-	-	-	4	2	3	4	-	0
Tunnel Ridge	Powell	5	6	3*	6	3	4	0	5	3	0	0	0	0	0	0	1
Total Drummers <sup>a</sup>		53	65	75	67	63	73	69	43	39	30	39	31	49	44	8	25

<sup>a</sup> Total number of drumming males observed. Includes drummers heard at a station both days of the survey, so summation of the column will not equal the total number.

\* Route only run on one day.

+ Route was run after the first two weeks of April.